claim 1 has been amended to include the limitations of claims 2-6.

Claims 1-6 and 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Glezer. While it is noted that claims 14-15 have been canceled, claim 1 has been amended to include the limitations of claims 2-6. Thus, Applicants respectfully traverse the rejection insofar as it has been applied to claim 6. The Glezer patent does not disclose or suggest the inclusion of a plurality of apertures on one airfoil surface, nor a plurality of apertures on each of two airfoil surfaces. Thus, claim 1, as amended, is clearly patentable over the Glezer patent.

Claims 7-8, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glezer in view of O'Neil. All of these claims depend upon patentable claim 1, and thus, the rejection is respectfully traversed.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Soviet Union Patent No. 1,761,973. Claim 12 has been rewritten in independent form, and Applicants respectfully traverse this rejection. The Soviet reference is directed to the entirely different case of a wind generator blade, and shows apertures 6 disposed along substantially the entire length of the lower blade surface. In contrast, the claim limits such arrays to within a distance less than 8% of the blade chord length from the trailing edge. In the aerospace applications addressed by the invention, it is only desired to change the blade's aerodynamic characteristics over a very small blade length proximate to the trailing edge. Across a distance greater than about 8%, the inventors found that the unique advantages of the invention are lost, particularly the benefit with respect to minimizing flutter. There is no motivation in the prior art for modifying the Soviet reference to meet the claim limitations, except that which is taught by Applicants in the present specification, the application of which in order to reject claim 12 constituting, of course, impermissible hindsight reconstruction.

With respect to the rejections based upon obviousness-type double patenting, a terminal disclaimer will be prepared and filed in due course.

In view of the foregoing amendments, Applicants respectfully submit that each of the pending claims are allowable over the prior art of record, and an early notification of allowance is earnestly solicited. The Examiner is requested to contact the undersigned at

the number below, should any further questions or issues need to be resolved.

Respectfully submitted,

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APPENDIX (VERSION WITH MARKINGS TO SHOW CHANGES MADE)

IN THE SPECIFICATION:

Please amend the second paragraph on page 2, from lines 8-14, to read as follows:

-- This application is a continuation-in-part of U.S. Application Serial No. 08/869,725, filed June 5, 1997 and now U.S. Patent No. 6,092,990, titled OSCILLATING AIR JETS FOR HELICOPTER ROTOR AERODYNAMIC CONTROL AND BVI NOISE REDUCTION; and U.S. Application Serial No. 08/869,372, filed June 5, 1997 and now U.S. Patent No. 5,938,404, titled OSCILLATING AIR JETS ON AERODYNAMIC SURFACES; both of which are commonly assigned and the contents of which are expressly incorporated herein by reference. --

IN THE CLAIMS:

Please amend the claims to read as follows:

1. (Amended) An active control device for improving air flow characteristics in a vicinity of an airfoil, the airfoil having an outer aerodynamic surface and an interior volume, the airfoil having a chord of predetermined length, the aerodynamic surface comprising a leading edge and a trailing edge, the active control device comprising:

[at least one] a plurality of apertures disposed on the outer aerodynamic surface, said [at least one] plurality of apertures communicating the outer aerodynamic surface to the interior volume;

a chamber disposed within the interior volume, said chamber defining a volume in fluid communication with said apertures; [and]

[at least one] a plurality of diaphragms defining a wall of said chamber, said [at least one] plurality of diaphragms each being movable between a first position and a second position, wherein movement of each of said [at least one] diaphragms from said first position to said second position pushes air present in the interior volume through said [at least one] plurality of apertures and out of the interior volume, and wherein movement of each of said [at least one] diaphragms from said second position to said first position draws air through said [at least one] plurality of apertures and into the interior volume; and

a controller operatively coupled to said plurality of diaphragms, said controller

controlling movement of said plurality of diaphragms;

wherein a total number of said plurality of apertures corresponds to a total number of said plurality of diaphragms, and each of said plurality of diaphragms pushes and draws air through a corresponding one of said plurality of apertures.

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Amended) An active control device in accordance with claim [6] 1, comprising:

first and second sensors operatively coupled to said controller, said first and second sensors disposed on the aerodynamic surface, said first and second sensors measuring a flow characteristic of air proximal to said first and second sensors.

11. (Amended) An active control device in accordance with claim 1, wherein:

said [at least one] plurality of apertures is disposed on the outer aerodynamic surface proximal the trailing edge.

12. (Amended) An active control device [in accordance with claim 1, wherein] for improving air flow characteristics in a vicinity of an airfoil, the airfoil having an outer aerodynamic surface and an interior volume, the airfoil having a chord of predetermined length, the aerodynamic surface comprising a leading edge and a trailing edge, the active control device comprising:

at least one a aperture disposed on the outer aerodynamic surface, said at least one aperture communicating the outer aerodynamic surface to the interior volume;

a chamber disposed within the interior volume, said chamber defining a volume in fluid communication with said aperture; and

at least one diaphragm defining a wall of said chamber, said at least one diaphragm being movable between a first position and a second position, wherein movement of said at least one

diaphragm from said first position to said second position pushes air present in the interior volume through said at least one aperture and out of the interior volume, and wherein movement of said at least one diaphragm from said second position to said first position draws air through said at least one aperture and into the interior volume;

wherein said at least one aperture is disposed along the aerodynamic surface a distance of [at least 5 percent but not greater] less than 8 percent of the chord length from the trailing edge.

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)